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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,587	04/09/2001	Pavel N. Laptev	SPUTT-56141	7932

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EXAMINER
ZERVIGON, RUDY

ART UNIT	PAPER NUMBER
1763	4

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)
	09/829,587	LAPTEV, PAVEL N.
	Examiner	Art Unit
	Rudy Zervigon	1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) *22-42* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21 and 43-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 April 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ ~~The oath or declaration is objected to by the Examiner.~~

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Oral election of June 20, 2002* .

Notice of References Cited	Application/Control No. 09/829,587	Applicant(s)/Patent Under Reexamination LAPTEV, PAVEL N.	
	Examiner Rudy Zervigon	Art Unit 1763	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,146,464	11-2000	Beinglass et al.	118/730
	B	US-5,810,933	09-1998	Mountsier et al.	118/724
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-21, drawn to an apparatus, classified in class 156, subclass 345.

II. Claims 22-42, drawn to a method, classified in class 438, subclass 689.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as etching a metal layer.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Ellsworth Roston on 6/20/02 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-21. Affirmation of this election must be made by applicant in replying to this Office action. Claims 22-42 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

2. Applicant's amendment to Page 9, line 17 – page 10, line 5 where Applicant has amended reference numeral "30" to reference numeral "20" thereby distinguishing "enclosure" and "plate" which removes the prior objection on this issue.

3. Applicant's amendment to Page 9, line 17 – page 10, line 5 where Applicant has amended reference characters "34" and "30" thereby distinguishing "ground" (34) and "plate" (30) which removes the prior objection on this issue.

4. The drawings remain objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first electrical conductor" and the "second electrical conductor" must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-4, 7-9, 11, 14-16, 19-21, 43, 44, 45, 46, 47, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Koshimizu (USPat. 5,980,687) and demonstrated by Mountsier et al (USPat. 5,810,933)[1]. Koshimizu teaches a conduit (202, Figure 3) for molecules of a gas (column 5, lines 13-16), a first electrode (116, Figure 1,3,3) at a first position (116, Figure 1,3,3) biased to a first voltage (column 4, lines 43-55) and spaced from the wafer (W attached to 116, Figure 1,3,3), a second electrode at a second position (110, Figure 1,3,3) biased to a second voltage lower ("Thus, predetermined high frequency powers are, preferably the same high frequency power is, applied to the first and second susceptor 110 and 116, respectively"; column 4, lines 46-51) than the first voltage (column 4, lines 43-55).

Although Koshimizu does not teach argon as the operating gas, it has been established that apparatus claims must distinguish from the prior art in terms of structure rather than function. See MPEP 2114. As a result, it is inherent that Koshimizu can supply argon as the etching gas. Koshimizu further teaches a second electrode (110, Figure 1,3,3) at a second position biased to a second voltage lower (as above) than the first voltage and spaced from the first electrode (116, Figure 1,3,3) and the wafer, magnetic members providing a magnetic field, the first electrode (116, Figure 1,3,3) and the magnetic members (124, Figure 1,3,3) being disposed relative to each other (114, Figure 1,3,3; column 3, lines 54-61). The second electrode (110, Figure 1,3,3) and

[1] MPEP 2116.01

the wafer (W attached to 110, Figure 1,3,3) being disposed relative to each other (122, Figure 1,3; column 4, lines 13-22).

Koshimizu further teaches a first member (104, Figure 1,3) disposed adjacent the first electrode (116, Figure 1,3) for providing a reference potential different in magnitude (grounded, see Figure 1,3) from the bias on the first electrode (116, Figure 1,3) to create a first electrical field, and a second member (204, Figure 3, 4) disposed adjacent the second electrode (110, Figure 1,3) for providing the reference potential (also grounded – 204/208 contact with grounded 104; Figures 3, 4) to create a second electrical field.

Koshimizu further teaches a first source (134) of alternating voltage for creating the bias on the first electrode, the bias on the first electrode being a negative direct voltage, the second source (130) of alternating voltage for creating the bias on the second electrode, the bias on the second electrode being a negative direct voltage – it is anticipated by Koshimizu and common practice in the art that all wafers (or other articles) positioned on supports or electrodes would necessarily have a gap between the wafer/article and the support surface upon which the wafer/article is resting or electrically clamped and where providing a direct current bias as a result of the first (134) and second (130) sources of alternating voltage. This is demonstrated by Mountsier who shows a typical wafer-support interface (62/52; Figure 6). As such, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

Claim Rejections - 35 USC § 103

14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claims 5, 6, 10, 12, 13, 17, 18, 20, 48, 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshimizu (USPat. 5,980,687) in view of Mountsier et al (USPat. 5,810,933). Koshimizu is discussed above, however Koshimizu does not teach that the wafer and the first electrode define a series relationship between two capacitors, one having a high capacity impedance and the other having a low capacity impedance. Koshimizu does not provide apparatus to support an electrically floating substrate supported by a powered electrode.

Mountsier teaches a wafer support platform (52, Figure 5; column 4, lines 20-23) that provides a series relationship between two capacitors, one (68 dielectric gap; Figure 5; column 4, lines 20-23) having a high capacity impedance and the other (80/82 dielectric gap; Figure 6) having a low capacity impedance. In particular, because the wafer support 52 is made of an electrical insulator (ceramic, column 5, lines 8-20) capacitance across the stated points is established and the wafer (62) is electrically floated.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Koshimizu to replace his wafer support platform with Mountsier's wafer support platform. Motivation for Koshimizu to replace his wafer support platform with Mountsier's wafer support platform is to provide an alternate means for supporting the substrate.

16. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

17. Claims 1-21, and 43-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's own admitted prior art in view of Mountsier et al (USPat. 5,810,933). Applicant teaches Figure 1 as prior art including the differences between the prior art device and the improvement as stated in the specification (Page 12, lines 1-9). Applicant admits that the sole difference between Applicant's admitted prior art and the invention is the separation of the electrode and the wafer (last line, Page 12, lines 1-9).

Mountsier, as stated above, teaches a wafer support platform (52, Figure 5; column 4, lines 20-23) that provides a series relationship between two capacitors, one (68 dielectric gap; Figure 5; column 4, lines 20-23) having a high capacity impedance and the other (80/82 dielectric gap; Figure 6) having a low capacity impedance. In particular, because the wafer support 52 is made of an electrical insulator (ceramic, column 5, lines 8-20) capacitance across the stated points is established and the wafer (62) is electrically floated.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Koshimizu to replace his wafer support platform with Mountsier's wafer support platform. Motivation for Koshimizu to replace his wafer support platform with Mountsier's wafer support platform is to provide an alternate means for supporting the substrate.

Response to Arguments

19. Applicant's arguments filed December 3, 2002 have been fully considered but they are not persuasive.

20. Applicant argues that Koshimizu differs from the presently claimed invention because Koshimizu process two wafers and not one and that Koshimizu does not use an inert gas. Applicant's argument is not convincing. In response to applicant's argument that Koshimizu cannot anticipate the claimed invention because Koshimizu process two wafers and not one, and that Koshimizu does not use an inert gas a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Additionally, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114)

21. Arguments directed to the Novak reference are moot in view of the new rejection applying Mountsier in place of Novak.

22. In response to applicant's argument that Koshimizu, alone or in combination with the newly cited reference to Mountsier, do(es) not teach a structure for "producing an ionization of

molecules of an inert gas in the enclosure or that the second electrode provides the low electric field in cooperation with the magnetic field for etching the surface of the insulating layer on the wafer to obtain the smooth and uniform etching surface" , a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Additionally, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

23. Applicant's request for a formal action on non-elected claims 22-42 is denied in view of the formal oral election made on June 20, 2002 by Ellsworth Roston and mediated by Examiner DuyVu n Deo whose telephone number is 703.305.0515. A reproduction of the oral election is provided as part of this action for Applicant's reference.

24. Applicant has provided sufficient explanation of page 12, lines 1-5 of the specification for the Examiner to remove the request for information under 37CFR 1.105 made in the prior office action.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPat. 6,146,464

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.

JEFFRIE R. LUND
PRIMARY EXAMINER